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PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

REXWORKS, INC.
MILWAUKEE, WI
WID 000 809 137

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EPA Region	:	5
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EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Rexworks, Inc. (Rexworks) facility in Milwaukee, Milwaukee County, Wisconsin. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The Rexworks facility manufactures truck-mounted concrete mixers, portable concrete batch plants, landfill tractor trash compactors, and portable shredders. The facility generates the following waste streams: nonhazardous scrap steel, nonhazardous soluble oil, nonhazardous baghouse dust, waste paint (D001), waste thinners (D001), nonhazardous waste paint filters, nonhazardous wet paint booth sludge, nonhazardous used oil, monitoring-well groundwater (unknown), diesel fuel-contaminated groundwater (D001), waste petroleum naphtha (D001), and nonhazardous waste grease.

The facility has operated at its current location since 1978. The facility occupies 24.5 acres in a mixed-use area and employs about 250 people. The facility's current regulatory status is that of a large-quantity generator of hazardous waste. Rexnord, Inc. (Rexnord), submitted a Notification of Hazardous Waste form for the facility to the U.S. Environmental Protection Agency (EPA) on August 18, 1980. Rexnord submitted a RCRA Part A permit application for the South Yard Drum Storage Area (DSA) (SWMU 3) on November 17, 1980. The facility was an interim status treatment, storage, or disposal (TSD) facility until it underwent RCRA closure in December 1988; the facility closed SWMU 3 at that time.

The facility was built in about 1901 as a foundry. At that time, the facility belonged to the Filer and Stowell Company. It appears that the facility never was equipped or occupied for foundry use. From 1940 to 1978, the facility was owned by the Heil Company. Rexnord purchased the facility in 1978. In 1982, Rexworks was formed through a leveraged buyout of Rexnord.

potential contamination would be limited to the subsurface. During filling operations in January 1986, an unknown amount of No. 6 fuel oil was released to the Kinnickinnic River through an on-site storm sewer.

Receptors of potential releases from the Rexworks facility include Rexworks employees and nearby residents of Milwaukee. The nearest residents live across the street to the west. The facility is completely fenced and has security guards at gate entrance during evening and weekend hours.

The City of Milwaukee obtains its drinking water from Lake Michigan. The nearest active groundwater well is within 1 mile downgradient and southeast of the facility. The nearest surface water body, the Kinnickinnic River, is located about 2,000 feet north of the facility. The Kinnickinnic River is used for recreational and industrial purposes and flows into Lake Michigan about 3 stream miles north-northeast of the facility.

No sensitive environments are located on site. Three sensitive environments greater than 2 acres in size have been identified within 2 miles of the facility. These areas do not drain to other surface water bodies. One endangered species, the Peregrin falcon, inhabits Milwaukee County.

PRC recommends no further action for the Flammable Storage Room (SWMU 1), the Scrap Steel Storage Area (SWMU 4), the Machining Chip Hopper (SWMU 5), and Soluble Oil Accumulation Area (SWMU 6). PRC recommends that the facility close the drums in the SAAs (SWMU 2) when they are not being filled. The facility should implement release controls (such as concrete curbs) to prevent a release from the South Yard DSA (SWMU 3) from flowing into the storm sewer. The facility should continue remedial activities at the Former USTs (AOC 1) under WDNR supervision. The facility should install groundwater monitoring wells around the Fuel Oil USTs (AOC 2) as planned.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

completed on January 7, 1994. PRC gathered and reviewed information from the Federal Emergency Management Agency (FEMA), U.S. Department of Agriculture (USDA), U.S. Department of Commerce (USDC), U.S. Department of Interior (USDI), U.S. Geological Survey (USGS), Wisconsin Department of Natural Resources (WDNR), Wisconsin Geological and Natural History Survey (WGNHS), and from EPA Region 5 RCRA files. The VSI was conducted on January 11, 1994. It included interviews with facility representatives and a walk-through inspection of the facility. PRC identified six SWMUs and two AOCs at the facility.

The VSI is summarized and 10 inspection photographs are included in Appendix A. Field notes from the VSI are included in Appendix B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors.

2.1 FACILITY LOCATION

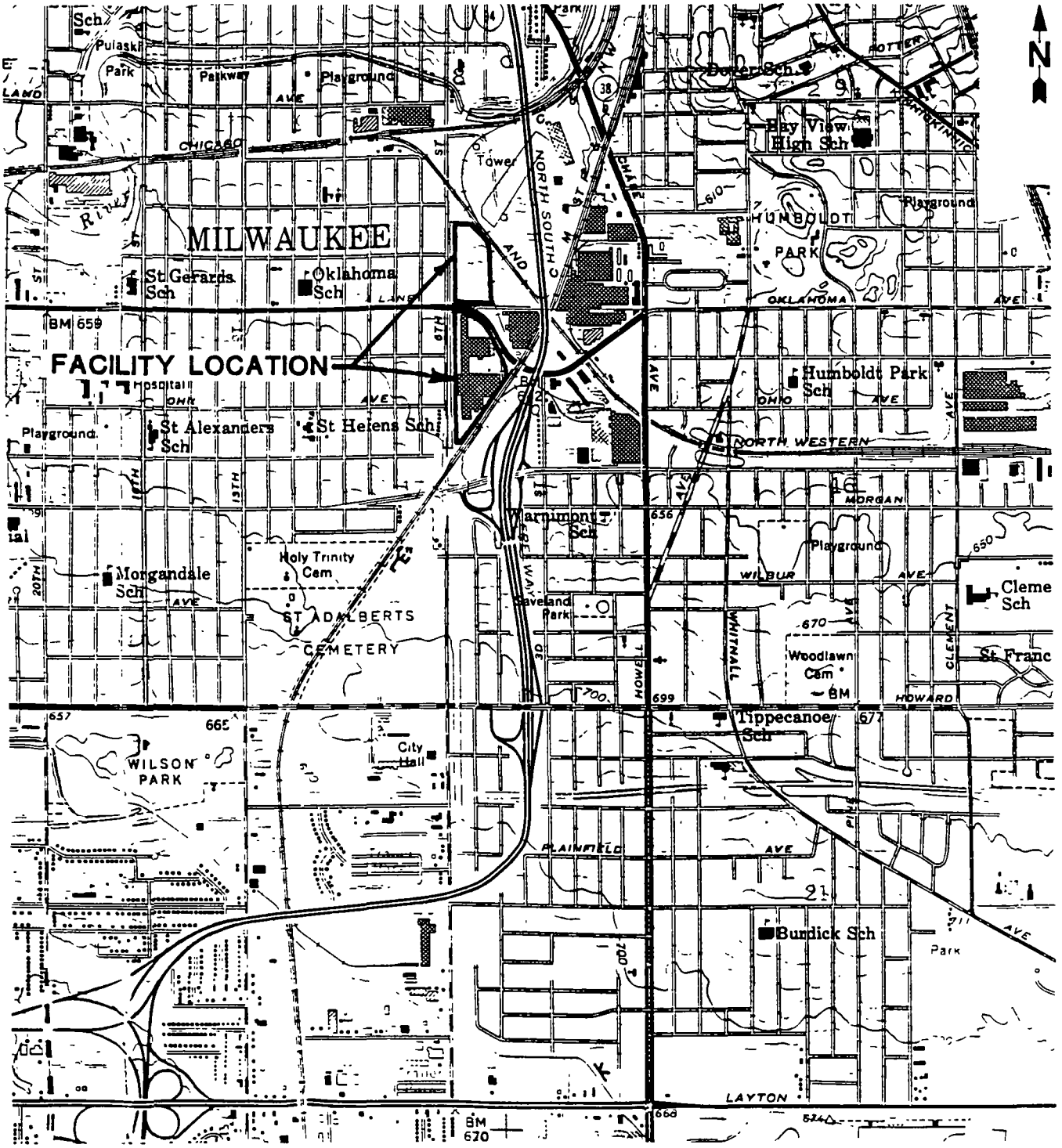
The Rexworks facility is located at 445 West Oklahoma Avenue in Milwaukee, Milwaukee County, Wisconsin. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 42°59'10" N and longitude 87°55'01" W). The facility occupies 24.5 acres in a mixed-use area.

The facility is bordered on the north by the Chicago and North Western Railroad, on the west by 6th Street and residences, on the south by the Chicago, Milwaukee, St. Paul, & Pacific Railroad and residences, and on the east by a water filtration systems manufacturer.

2.2 FACILITY OPERATIONS

The Rexworks facility manufactures truck-mounted concrete mixers, portable concrete batch plants, landfill tractor trash compactors, and portable shredders. Facility operations include: metal cutting and forming, machining, welding, painting, and fabricating. Some truck frames, diesel engines, and transmissions are received assembled. Raw materials include: paints, thinners, oils, grease, antifreeze, and steel sheets. The facility has three aboveground storage tanks (AST) for bulk storage of oxygen, argon, and propane. Transmission fluid, diesel fuel, and hydraulic fluid are received in bulk and stored in 400-gallon steel totes. Five underground storage tanks (UST) used for bulk storage of mineral spirits, hydraulic fluid, fuel oil, and gasoline were removed in 1988 and 1990. Two USTs still exist at the site for storage of No. 6 fuel oil.

The facility was built in about 1901 as a foundry. At that time, the facility belonged to the Filer and Stowell Company. It appears that it never was equipped or occupied for foundry use. The use of the facility when owned by the Filer and Stowell Company is not known. From 1940 to 1978,



SOURCE: MODIFIED FROM USGS, GREENDALE QUADRANGLE, 1976

REXWORKS, INC.
MILWAUKEE, WISCONSIN

FIGURE 1
FACILITY LOCATION

PRC ENVIRONMENTAL MANAGEMENT, INC.

the facility was owned by the Heil Company, a heating systems manufacturer. Several building additions were constructed in the 1930s, 1940s, and 1960s. Rexnord, Inc. (Rexnord), purchased the facility in 1978. In 1982, Rexworks, Inc., was formed through a leveraged buyout of Rexnord. In 1984, Rexworks, Inc., became publicly owned. The facility currently employs about 250 people on a two-shift, 5-day workweek.

The facility consists of one 400,000-square-foot building for office space, fabrication, and warehousing. About 30,000 square feet of the facility building is leased to A.C. Siemens for warehousing. An employee parking lot is located north of the facility across Oklahoma Avenue.

Steel is received in sheets and is cut in a hydraulic press. Thicker steel sheets are cut with a torch over a bed of water. The bed of water is used for cooling and collecting slag from the cutting. Hydraulic presses also are used to form steel pieces before welding. Arc welding is performed throughout most of the plant. Metal frames are used to hold steel pieces in place for welding.

Five paint booths are used for painting of steel components and finished products. All paint booths use solvent-based paints. Four paint booths have dry filter systems, and one has a water curtain for air pollution control. The water curtain is contained in a baffled tank below the paint booth. This tank is cleaned three times annually; its process water is discharged during cleaning to the Milwaukee Metropolitan Sewerage District (MMSD).

Solid wastes generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

2.3 WASTE GENERATION AND MANAGEMENT

This section describes waste generation and management at the Rexworks facility. The facility's SWMUs are identified in Table 1. The facility layout, including SWMUs and AOCs, is shown in Figure 2. The facility's waste streams are summarized in Table 2. Annual generation rates presented are based on 1992 waste generation data.

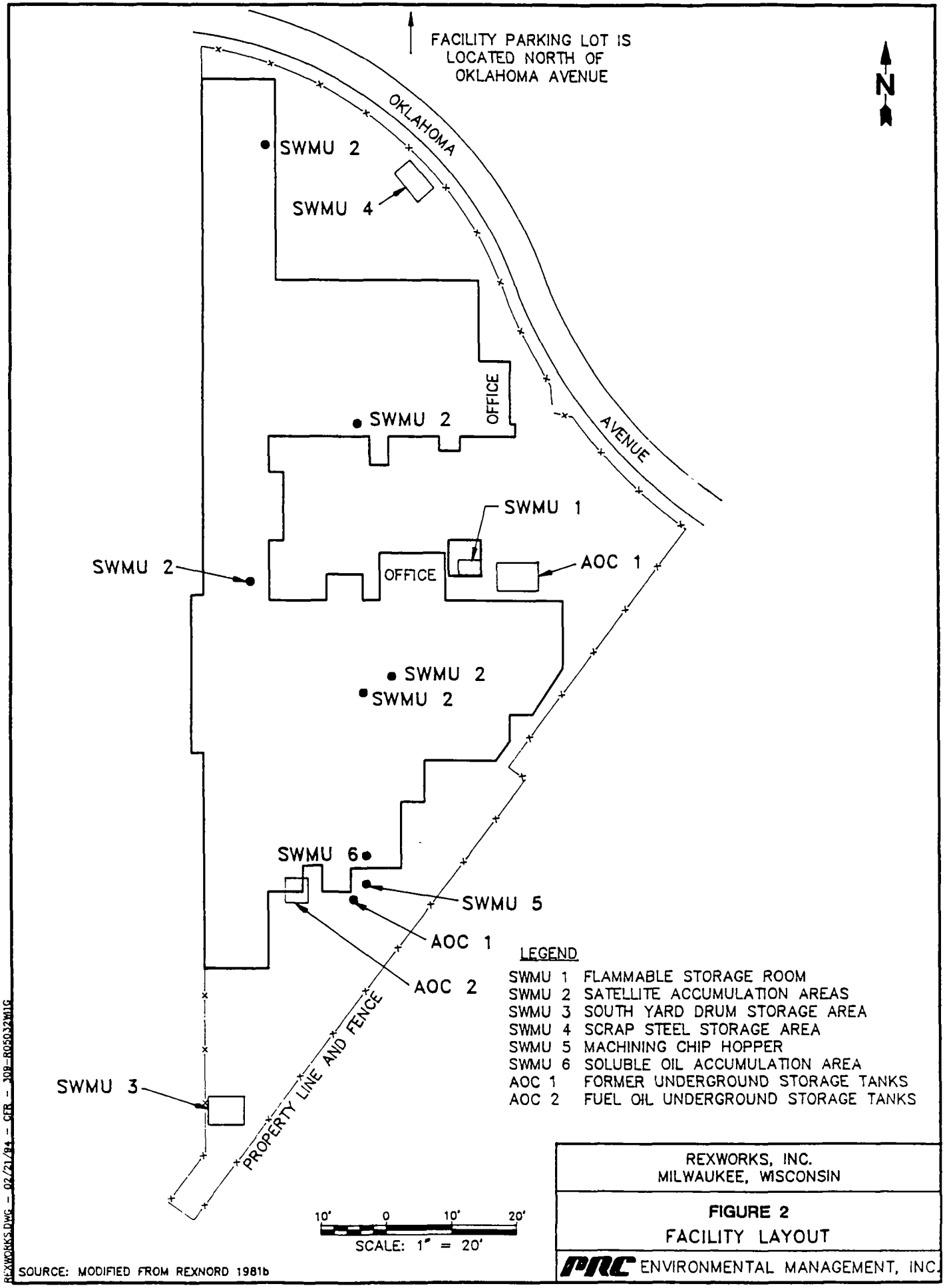
TABLE 1

SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Flammable Storage Room	No	Active; less than 90-day storage of hazardous waste
2	SAAs	No	Active; accumulation of hazardous waste
3	South Yard DSA	Yes	Active; RCRA closure approved in December 1988 by WDNR; currently used for storage of nonhazardous waste
4	Scrap Steel Storage Area	No	Active; storage of nonhazardous waste
5	Machining Chip Hopper	No	Active; storage of nonhazardous waste
6	Soluble Oil Accumulation Area	No	Active; accumulation of nonhazardous waste

Note:

[a] A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.



REXWORKS, INC.
MILWAUKEE, WISCONSIN

FIGURE 2
FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT, INC.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a,b]	Source	Solid Waste Management Unit[c]
Scrap steel/NA	Facility operations	4 and 5
Soluble oil/NA	Machining	3 and 6
Baghouse dust/NA	Shot blaster	3
Waste paint/D001	Painting	1 and 2
Waste thinners/D001	Painting	1 and 2
Waste paint filters/NA	Painting	3
Wet paint booth sludge/NA	Painting	None
Used oil/NA	Maintenance	1 and 3
Monitoring-well groundwater/Unknown	Quarterly sampling	1
Diesel fuel-contaminated groundwater/D001	Free product in groundwater	1
Waste petroleum naphtha/D001	Parts washers	None
Waste grease/NA	Non useable raw material	1

Notes:

[a] Not applicable (NA) designates nonhazardous waste.

[b] "Unknown" indicates that waste characterization has not been made..

[c] "None" indicates that the waste stream is not managed on site.

The facility generates the following waste streams: nonhazardous scrap steel, nonhazardous soluble oil, nonhazardous baghouse dust, waste paint (D001), waste thinners (D001), nonhazardous waste paint filters, nonhazardous wet paint booth sludge, nonhazardous used oil, monitoring-well groundwater (unknown), diesel fuel-contaminated groundwater (D001), waste petroleum naphtha (D001), and one time generation of nonhazardous waste grease.

Nonhazardous scrap steel is generated from the sizing, welding, and machining of steel sheets, and from recycling of metal pails and containers. Because of recycle value, scrap steel is separated into two categories: primary and secondary scrap steel. Primary scrap includes steel sheet cuttings, off-specification steel components, and machining chips. Secondary scrap includes slag from torch cutting of steel, metal straps from shipping crates, and crushed 5-gallon pails and 1-gallon containers from paints and thinners. Steel sheet cuttings and off-specification steel components accumulate in hoppers near work areas inside the facility which are transported to the Scrap Steel Storage Area (SWMU 4) or are placed directly on a truck for transport to a recycler. Machining chips are placed in the Machining Chip Hopper (SWMU 5). Slag is generated from the cleaning of the bed of water used in torch cutting. Slag is drained and placed in a hopper in SWMU 4. Metal straps and crushed pails and containers also are stored in SWMU 4. Before being crushed, pails and containers are drained in the SAAs (SWMU 2) and then are allowed to air dry. About 2,400 tons of nonhazardous scrap steel is generated annually. Primary scrap steel is sold to Parks-Pioneer Corporation of Milwaukee, Wisconsin, and secondary scrap steel is sold to Best Disposal Systems of Franklin, Wisconsin, for recycling.

Soluble oil is used as a coolant and lubricant in the machining area. Machining chips are collected and placed into a 1-cubic-yard hopper and are allowed to gravity drain. Nonhazardous soluble oil drips out of the bottom of the hopper into a 5-gallon pail and then is transferred into the Soluble Oil Accumulation Area (SWMU 6), consisting of a 55-gallon drum near the hopper. When full, the drum of waste is transferred to the South Yard DSA (SWMU 3) for storage. About 3,960 gallons of soluble oil is generated annually. This waste is fuelblended off site by Interstate Pollution Control, Inc., of Rockford, Illinois.

The facility uses a large shot blaster to clean steel components. A baghouse collects dust generated during this process. Nonhazardous baghouse dust collects in a 55-gallon drum below the baghouse.

When full, the drum of waste is stored in the South Yard DSA (SWMU 3). About 21,280 pounds of this waste is generated annually. This waste is landfilled at the Chemical Waste Management, Inc. (Chem Waste), Omega Hills landfill in Menomonee Falls, Wisconsin.

Paint is received in 5-gallon pails and is pumped out of the pails for use in spray guns. Leftover and residual paint in the pail is emptied into a 55-gallon drum in the SAAs (SWMU 2). This process generates waste paint (D001). When full, the drum is transported to the Flammable Storage Room (SWMU 1) where it is stored for less than 90 days. About 16,030 pounds of this waste is generated annually. This waste is fuelblended off site by Pollution Control Industries of East Chicago, Indiana.

Paint thinners are used to clean paint lines and spray guns. This process generates waste thinners (D001). The facility utilizes two types of thinners; one contains methyl amyl ketone and the other contains toluene, methyl ethyl ketone (MEK), isopropyl acetate, and butyl acetate (Rexworks 1994). Paint lines and spray guns are flushed into a 5-gallon pail, and the contents are emptied into a drum in the SAA (SWMU 2). When full, the drum is transported to the Flammable Storage Room (SWMU 1) where it is stored for less than 90-days. About 13,425 pounds of this waste is generated annually. This waste is fuelblended off site by Pollution Control Industries of East Chicago, Indiana.

Dry paint filters are used in four paint booths for air pollution control. When needed, the filters are removed from the paint booths and placed into 55-gallon drums with water. Floor sweepings from the cleaning of the paint booths also are placed in these drums. This process generates nonhazardous waste paint filters. This waste is stored in the South Yard DSA (SWMU 3). When enough drums of waste paint filters have accumulated in SWMU 3, the water is removed from the drums of waste and discharged to the MMSD. The waste paint filters are then emptied into a 12-cubic-yard lugger box and immediately moved off site. About 44,960 pounds of this waste is generated annually. This waste is disposed of at Chem Waste Omega Hills landfill in Menomonee Falls, Wisconsin.

A water curtain is used in one paint booth for air pollution control. Water is recirculated in a baffled tank below the paint booth. This tank is cleaned three times annually. When emptied, the process water is discharged to the MMSD. A contractor is hired to remove the sludge from the baffled tank. This process generates a nonhazardous wet paint booth sludge. The sludge is placed into a lined 12-cubic-yard lugger box supplied by the contractor and is immediately removed from the site.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility.

On January 23, 1986, about 250 gallons of No. 6 fuel oil was released during filling of two 32,000-gallon Fuel Oil USTs (AOC 2). The release was to a sloped asphalt drive adjacent to the facility building. An unknown amount of fuel oil reached a storm sewer drain located about 40 feet southwest of the fill area. Once the spill was identified, sorbent booms and chips were placed to clean up the fuel oil spill and prevent additional fuel oil from reaching the storm sewer (Rexworks 1986).

On January 24, 1986, facility representatives called the City of Milwaukee Sewer Maintenance Department and obtained the storm sewer discharge location on the Kinnickinnic River. Facility representatives went to the discharge point and observed No. 6 fuel oil in the river. WDNR was notified and advised Rexworks to place sorbent booms at the discharge point. AAA Industries was hired to boom off the discharge point and suck up accumulated oil within the boom (Rexworks 1986).

In July 1987, soil samples were collected adjacent to the asphalt surface of the South Yard DSA (SWMU 3) during closure activities. Five sample locations were along the downslope or east side of SWMU 3, and two sample locations were along the upslope or west side of SWMU 3. One surface soil sample and one subsurface soil sample from 2 to 3 feet below ground surface (bgs) were collected from each sample location for a total of 14 soil samples. Soil samples were analyzed for ignitability, corrosivity, reactivity, extraction procedure (EP) toxicity, oil and grease, and solvents. Soil analysis indicated that the soil surrounding SWMU 3 was not hazardous; however, elevated levels of oil and grease were identified and the solvent scan detected several volatile organic compounds (VOC). Oil and grease concentrations for surface soil samples ranged from 240 parts per million (ppm) to 21,000 ppm for the five sample locations from the east side of SWMU 3, and were 200 ppm and 240 ppm for the two sample locations from the west side of SWMU 3. Oil and grease concentrations for subsurface soil samples ranged from 160 ppm to 1,500 ppm for the east side of SWMU 3, and were 100 ppm and 160 ppm for the west side of SWMU 3. VOCs detected included:

N-butanol, carbon tetrachloride, isopropanol, chloroform, ethyl acetate, trichloroethylene, toluene, and xylene. VOC concentrations ranged from 0.005 ppm to 7.78 ppm (Triad 1988b).

In December 1987, WDNR required additional soil sampling east of SWMU 3 to delineate the extent of oil and grease contamination. In April 1988, seven soil borings were conducted to a depth of 6 feet. Five soil samples were collected from each borehole at 1- to 2-foot increments. These soil samples were analyzed for total petroleum hydrocarbons (TPH) instead of oil and grease. Soil analysis indicated that all samples contained less than 4 ppm of TPH. It was suggested that oil and grease contamination is limited to areas where there is visual evidence of oil on the ground surface (Triad 1988b).

In October 1988, the facility retained a contractor to remove soil with visual evidence of contamination from around SWMU 3. A representative of WDNR oversaw the excavation of the soil from three areas. The three areas were excavated down to a point where contamination could no longer be seen. During the excavation of the southernmost area (area No. 1), painting residue and paving substances such as stone and tar were unearthed. These materials were removed until there was no evidence of visually contaminated soil (Triad 1988b). About 27 cubic yards of contaminated soil was removed from Area No. 1 and was disposed of off site. Three soil samples were collected from the bottom of the excavation and analyzed for total metals and TPH. Two samples had elevated lead concentrations of 15 ppm and 55 ppm, and one of these samples had an elevated chromium concentration of 8.2 ppm. However, EP toxicity analyses showed metal concentrations were below the EP limit of 5 ppm. TPH analysis indicated that these soil samples had less than the detection limit of 4 ppm. About 10 cubic yards and 2.5 cubic yards of contaminated soil were removed from areas No. 2 and No. 3, respectively, and were disposed off site. Area No. 3 was located directly below an on-site railroad spur. Two soil samples were collected from the bottom of Area No. 2, and one soil sample from the bottom of Area No. 3. These samples were analyzed only for TPH, and the results indicated that all samples had less than the detection limit of 4 ppm (Triad 1988a). WDNR approved the closure of SWMU 3 in December 1988 (WDNR 1988c).

In August 1988, a 20,000-gallon UST containing mineral spirits, and a 1,000-gallon UST of unknown contents were removed. A 10,000-gallon UST containing fuel oil was removed in February 1990. All Former USTs (AOC 1) were located in the same area. In April and May 1990, CBC

Environmental Services (CBC) was contracted by the facility to conduct a subsurface hydrogeologic investigation. Eleven soil borings were drilled in the vicinity of AOC 1. Groundwater monitoring wells were installed in six of these soil borings. Petroleum-based hydrocarbon contamination was found in the soil and groundwater (Sigma 1992).

CBC returned to the facility in July 1990 and supervised the removal of an 8,000-gallon UST containing hydraulic oil, the excavation of contaminated soils, and the installation of two additional groundwater monitoring wells. The UST was in the same location as the Former USTs (AOC 1) and is included in AOC 1. Contaminated soils were identified under the adjacent facility building (Sigma 1992). During quarterly groundwater sampling of monitoring wells around AOC 1 on June 23, 1993, about 4 inches of free product (diesel fuel) was found in one of the monitoring wells. Rexworks notified WDNR of the free product found in the well. About 30 gallons of diesel fuel and groundwater was removed and placed into a 55-gallon drum. On June 29, 1993, about 20 additional gallons of diesel fuel was removed and placed in the previously designated drum (Sigma 1994). During the VSI, the drum was stored in the Flammable Storage Room (SWMU 1), and the contents were labeled as diesel fuel-contaminated groundwater (D001). The facility is currently working with WDNR to complete remedial activities.

In July 1992, WDNR received an anonymous complaint that Rexworks was disposing oil and coolant down a storm sewer drain. WDNR inspected the facility immediately after the complaint was received. The release was attributed to an error by summertime help. About 50 gallons of soluble cutting oil had been discharged to the storm sewer. The oily mixture was removed from the drain on the day it was dumped, and oil stains on the concrete near the storm sewer drain were cleaned up. WDNR recommended no further action (WDNR 1991; Sigma 1992).

2.5 REGULATORY HISTORY

Rexnord first submitted a Notification of Hazardous Waste Form to EPA on August 18, 1980, as a generator and a treatment, storage, or disposal (TSD) facility (Rexnord 1980a). The notification listed the following EPA waste codes: D001, D000, F002, F003, F005, and F017. Rexnord submitted a RCRA Part A permit application on November 17, 1980 (Rexnord 1980b). This application listed the process code S01 with a design capacity of 23,000 gallons for the South Yard

DSA (SWMU 3). Estimated annual waste generation and hazardous wastes listed in the Part A permit application include: 22 tons of D001 waste; 7 tons of F002, F003, and F005 waste; and 44 tons of F017 waste. Rexnord resubmitted its Part A permit application on December 21, 1981 (Rexnord 1981b). This application changed the estimated annual waste generation and hazardous wastes listed to include only 22 tons of D001, F003, and F005 wastes.

In 1982, Rexworks was formed through a leveraged buyout of Rexnord. Rexworks became publicly owned in 1984. Rexworks notified WDNR of its intention to close the South Yard DSA (SWMU 3) and submitted a closure plan in July 1986. Contaminated soils were identified during the closure sampling and about 40 cubic yards of contaminated soils was excavated and disposed of off site as detailed in Section 2.4. Rexworks submitted a subsequent Notification of Hazardous Waste Activity Form to EPA on December 9, 1988, as a large-quantity generator (Rexworks 1988). This notification listed D001 and F005 wastes. WDNR approved the closure of SWMU 3 in December 1988 (WDNR 1988c). The facility's current regulatory status is that of a large-quantity generator of hazardous waste.

In the past, the facility had several compliance problems. WDNR conducted compliance inspections on March 25, 1981; May 16, 1986; and November 11, 1988 (WDNR 1981, 1986, and 1988b). Inspectors noted violations related to the facility's waste analysis plan, inspection requirements, contingency plan, operating records, inadequate aisle space, storage within 50 feet of a property line, drum labeling, accumulations dates, drums stored uncovered, and personnel training and training records. The facility responded to the violations cited in the 1981 and 1988 inspections with corrective actions (Rexnord 1981a and Rexworks 1989). WDNR approved corrective actions for the 1988 inspection (WDNR 1989). The PA did not reveal that outstanding violations and corrective actions have been resolved.

The facility is required to have operating air permits. Permit No. MIN-12-DAA-82-41-182 for VOC emission control from one paint booth was issued on March 1, 1983. Permit No. NS-79-41-108 for particulate emission and capacity control from four paint booths, a shot blaster and baghouse, and the boiler was issued on April 21, 1980. In July 1986, a notice of violation was issued to Rexworks for exceeding its VOC emissions limit. In November 1987, EPA determined that the facility had

achieved compliance. An air compliance inspection was conducted on March 29, 1988. The facility was determined to be in compliance (WDNR 1988a).

Rexworks has a Wisconsin Pollutant Discharge Elimination System (WPDES) permit, Permit No. WI-0044938-3, for the discharge of boiler blowdown and noncontact cooling water. This permit covers discharge from one outfall to the storm sewer system, which is monitored annually (Sigma 1992). On March 27, 1990, a compliance monitoring survey was conducted by WDNR. The facility was found to be in compliance with the requirements of the WPDES permit (WDNR 1990). The facility is not required to have a sewer discharge permit for the discharge of its process water to the MMSD.

The facility has had eight USTs. UST capacity, contents, construction, date installed, and date removed are shown in Table 3. The removed USTs make up the Former USTs (AOC 1). Soil and groundwater contamination was identified in AOC 1 as detailed in Section 2.4. The facility is currently working with WDNR to complete remedial activities at AOC 1. The Fuel Oil USTs (AOC 2) include the two active 32,000-gallon tanks that were installed in 1930. These tanks are constructed of concrete and have not been leak tested. The facility plans to install groundwater monitoring wells around AOC 2 in the spring of 1994 to determine if soils and groundwater have been affected.

The facility has no history of CERCLA activities.

2.6 ENVIRONMENTAL SETTING

This section describes the climate; floodplain and surface water; geology and soils; and groundwater in the vicinity of the facility.

2.6.1 Climate

The climate in Milwaukee County is continental. The average daily temperature is 46.9 °F. The lowest average daily temperature is 29 °F in January. The highest average daily temperature is 84.1 °F in July (USDA 1971).

TABLE 3

REXWORKS FACILITY USTs

Capacity (gallons)	Contents	Construction	Date Installed	Date Removed
20,000	Mineral spirits	Steel	1960	August 1988
10,000	No. 2 fuel oil	Steel	1978	February 1990
575	Gasoline	Steel	1980	August 1988
8,000	Hydraulic oil	Steel	Unknown	July 1990
1,000	Unknown	Steel	Unknown	August 1988
32,000	No. 6 fuel oil	Concrete	1930	In place
32,000	No. 6 fuel oil	Concrete	1930	In place
8,000	Unused	Steel	Unknown	Abandoned in place

Source: Sigma 1992

The total annual precipitation for the county is 30.07 inches. The mean annual lake evaporation for the area is about 29 inches. The 1-year, 24-hour maximum rainfall is about 2.5 inches (USDC 1963).

Prevailing winds are northwesterly from November through March, northeasterly from April through June, and southwesterly from July through October. During the windiest months of March, April, and November, the average wind speed is 14 miles per hour. June and July are the least windy months, with an average wind speed of about 10 miles per hour (USDA 1971).

2.6.2 Surface Water

The Rexworks facility is not located in a floodplain (FEMA 1987). The nearest surface water body, the Kinnickinnic River, is located about 2,000 feet north of the facility. The Kinnickinnic River flows into Lake Michigan about 3 stream miles north-northeast of the facility. The Kinnickinnic River is used for recreational and industrial purposes. Lake Michigan is located about 2 miles east of the facility (USGS 1971 and 1976). Lake Michigan serves as a drinking water source for Milwaukee.

The area in which the facility is located is relatively flat. Facility surface water runoff is directed to on-site storm sewers and is discharged to the Kinnickinnic River.

2.6.3 Geology and Soils

Surface soils and subsurface soils underlying the facility consist of the Ozaukee-Morley-Mequon Association (USDA 1971). All subsoils consist of silty clay loam and clay 40 to 165 feet bgs. Although facility-specific information is not available, information on geological bedrock units in the general vicinity of the facility is available. Bedrock occurs immediately beneath glacial deposits of silty clay loam and clay till. The bedrock is a Silurian-aged dolomite of the Niagara, Alexandrian, and Erian Series. Well logs within 2 miles of the facility contain descriptions confirming the presence of glacial drift deposits underlain by Niagara Dolomite (WGNHS 1992). The Niagara Dolomite is about 330 feet thick in the area of the facility and is the most widely used source of generally good quality groundwater (USGS 1973).

Ordovician-aged formations underlie the Niagara Dolomite. The uppermost formation is the Maquoketa Shale, an aquitard up to 400 feet thick. This unit is underlain by the Sinnippee Group, which consists of Galena, Decorah, and Platteville Dolomites with some limestone and shale. The Sinnippee Group is up to 340 feet thick. Underlying the Sinnippee Group is the St. Peter Sandstone and orthoquartzitic sandstone with small amounts of limestone, shale, and conglomerate. This 330-foot-thick formation is the most widely used sandstone aquifer. The 140-foot-thick Prairie du Chien Formation, which is not used as a source of groundwater, underlies the St. Peter Formation and is commonly used in combination with the sandstone and Niagara Dolomite aquifers (USGS 1973).

2.6.4 Groundwater

The primary aquifer beneath the facility is the 330-foot-thick Niagara Dolomite. Most wells in the Niagara Dolomite aquifer produce at least 10 gallons per minute (gpm), and some high-capacity wells produce as much as 1,200 gpm. Water moves through cracks, crevices, and fractures; however, the distribution of these openings is not uniform in the aquifer; and therefore, well yields are unpredictable. In most cases, recharge to the Niagara Dolomite aquifer is local, and paths of movement are short. Groundwater flows west to east. Because much of the glacial deposits are clay till, many parts of the Niagara Dolomite aquifer are under artesian pressure. The potentiometric surface of the Niagara Dolomite ranges from the top of the aquifer up to or above the land surface (USGS 1973). Well logs from the area show an average static water level of about 12 feet bgs (WGNHS 1992). A private well was located at the facility. This well was abandoned in 1978 (Sigma 1992).

2.7 RECEPTORS

The Rexworks facility occupies 24.5 acres in a mixed-use area in Milwaukee, Milwaukee County, Wisconsin. In 1990, Milwaukee had a population of about 628,088 people (Rand McNally 1992).

The facility is bordered on the north by the Chicago and North Western Railroad, on the west by 6th Street and residences, on the south by the Chicago, Milwaukee, St. Paul, and Pacific Railroad and residences, and on the east by a water filtration systems manufacturer. The nearest school is located

about 2,000 feet west of the facility. The facility is completely fenced and has security guards at its gate entrance during evening and weekend hours.

The nearest surface water body, the Kinnickinnic River, is located about 2,000 feet north of the facility. The Kinnickinnic River is used for recreational and industrial purposes and flows into Lake Michigan about 3 stream miles north-northeast of the facility (USGS 1976).

Groundwater is not used as a drinking water source near the Rexworks facility. The nearest active groundwater well is within 1 mile of the facility on Whitnall Avenue. This well is southeast and downgradient of the facility (City of Milwaukee 1992; WGNHS 1992). The city obtains its drinking water from Lake Michigan.

No sensitive environments are located on site. Three sensitive environments greater than 2 acres in size have been identified within 2 miles of the facility. These areas are Palustrine open-water ponds located in county parks (SEWRPC 1989). These ponds do not drain to another surface water body (USGS 1971 and 1976). One endangered species, the Peregrin falcon, inhabits Milwaukee County (USDI 1989).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the six SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

SWMU 1 **Flammable Storage Room**

Unit Description: The unit is located indoors on the east side of the facility. The flammable storage room measures about 20 by 35 feet and has a concrete floor. The two entrances to the room are accessed from the outdoors. Drums of hazardous waste are stored toward the center of the room on wooden pallets. Smaller containers of flammable virgin material are stored on racks around the perimeter of the room.

Date of Startup: This unit began operation in 1987.

Date of Closure: This unit is active for less than 90-day storage of hazardous waste.

Wastes Managed: This unit manages waste paint (D001), waste thinners (D001), diesel fuel-contaminated groundwater (D001), nonhazardous waste grease, and nonhazardous used oil.

Release Controls: The unit is located indoors on a concrete floor. The flammable storage room has a 6-inch-high containment curb at entrance ways. No floor drain is located in the unit, and the unit is equipped with an overhead sprinkler system. Drums of waste are stored closed and on wooden pallets in the unit.

History of Documented Releases: No releases from this unit have been documented.

Observations:	During the VSI, the unit contained three drums of waste thinners (D001); four drums of waste paints (D001); one drum of diesel fuel-contaminated groundwater (D001); one rusted drum of nonhazardous waste grease; four drums of nonhazardous used oil; and two drums of monitoring well groundwater (unknown) from quarterly sampling activities at the Former USTs (AOC 1) awaiting characterization. PRC noted no evidence of release (see Photographs No. 1 and 2).
SWMU 2	**SAAs**
Unit Description:	This unit consists of five SAAs located indoors on the concrete floor. Each SAA consists of two drums, one for waste paints (D001) and one for waste thinners (D001). Each SAA is located next to a spray paint booth. Drums of wastes are stored on either wooden pallets or metal casters. Empty 5-gallon paint pails are placed on top of waste drums and allowed to drain. Waste thinners from the cleaning of paint lines and spray guns are flushed into 5-gallon pails, and then the contents are emptied into the waste drum via a funnel. When full, the drums are transferred to the Flammable Storage Room (SWMU 1) where they are stored for less than 90 days.
Date of Startup:	This unit began operation in 1980.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages waste paints (D001) and waste thinners (D001) in 55-gallon drums.
Release Controls:	This unit is located indoors on the concrete floor. No floor drains are located near the unit.

History of Documented Releases: No releases from this unit have been documented.

Observations: During the VSI, several of the SAA drums were uncovered when not in use. Paint stains were observed on the waste drums and on the concrete floor below the unit. Several drums of wastes were not stored covered (see Photographs No. 3 and 4).

SWMU 3 **South Yard DSA**

Unit Description: This unit is located outdoors on the southern end of the facility. The unit measures about 30 by 50 feet. Drums of wastes are stored on wooden pallets on the asphalt surface. Drums of wastes are stacked two high. The unit is sloped northward, and surface water drainage is directed over a gravel drive to a storm sewer drain located about 150 feet northeast of the unit.

Date of Startup: This unit began operation in 1980.

Date of Closure: This unit is active. This unit underwent RCRA closure, and the closure was approved by WDNR in December 1988.

Wastes Managed: This unit formerly managed waste paint (D001) and waste thinners (D001) and currently manages nonhazardous soluble oil, baghouse dust, waste paint filters, and used oil.

Release Controls: This unit has no release controls.

History of Documented Releases: During closure of this unit, about 40 cubic yards of contaminated soil was excavated from three gravel areas near the unit and disposed off site as detailed in Section 2.4.

Observations:	During the VSI, the unit contained many drums. Some drums were rusted, and drums that contained waste paint filters and water were bulging because of the extreme cold. PRC noted no evidence of release (see Photographs No. 5 and 6).

SWMU 4 **Scrap Steel Storage Area**

Unit Description:	This unit is located outdoors on the gravel ground surface. The unit measures about 20 by 40 feet. Several metal hoppers are used in this unit to store scrap steel. Each hopper is from 4 to 12 cubic yards in size. Scrap steel accumulates in several areas within the facility and is transported to this unit for storage. A storm sewer drain is located in the middle of the unit. Primary and secondary scrap steel are stored in separate hoppers.
Date of Startup:	This unit began operation in about 1978.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages nonhazardous scrap steel.
Release Controls:	This unit has no release controls.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, three hoppers of scrap steel were being stored in the unit. PRC noted no evidence of release (see Photograph No. 7).

SWMU 5	**Machining Chip Hopper**
Unit Description:	This unit is located outdoors on an asphalt surface. The unit consists of a 12-cubic-yard metal hopper covered with a tarp. Oil-soaked machining chips accumulate in a 1-cubic-yard hopper in the machining area. The machining chips are allowed to set in the machining area while excess soluble oil drips out the bottom of the 1-cubic-yard hopper into a 5-gallon pail for off-site disposal. The 1-cubic-yard hopper is then transported to the unit, and the contents emptied into the unit. A storm sewer is located just to the west of this unit.
Date of Startup:	This unit began operation in about 1978.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages nonhazardous scrap steel.
Release Controls:	This unit is kept covered and is located on an asphalt surface.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the unit contained some machining chips and was covered with a tarp. PRC noted no evidence of release (see Photograph No. 8).
SWMU 6	**Soluble Oil Accumulation Area**
Unit Description:	This unit is located indoors on the concrete floor. The unit consists of a 55-gallon drum on a wooden pallet. Waste is transferred to this unit via a 5-gallon pail. When full, the drums are transferred to the South Yard DSA (SWMU 3) for storage.

Date of Startup:	This unit began operation in about 1978.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages nonhazardous soluble oil in 55-gallon drums.
Release Controls:	This unit is located indoors on the concrete floor. No floor drains are located near the unit.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, a partially full drum of waste was located on a wooden pallet. PRC noted no evidence of release. No photograph of this unit was taken.

4.0 AREAS OF CONCERN

PRC identified two AOCs during the PA/VSI. These AOCs are discussed below; their locations are shown in Figure 2.

AOC 1 **Former USTs**

This AOC consists of five USTs that have been removed from the facility. UST capacity, contents, construction, date installed, and date removed are shown in Table 3. The 575-gallon gasoline UST is located in the southern section of the facility apart from the four other USTs in this AOC. In 1990, a subsurface hydrogeologic investigation was conducted in the area of the former USTs and identified petroleum-based hydrocarbon contamination in the soil and groundwater as detailed in Section 2.4. The facility is currently working with WDNR to complete remedial activities (see Photograph No. 9).

AOC 2 **Fuel Oil USTs**

This AOC consists of two active 32,000-gallon tanks that were installed in 1930. These tanks are constructed of concrete and have not been tested for leaks. The facility plans to install groundwater monitoring wells around this AOC in the spring of 1994 to determine if soils and groundwater have been affected. During filling operations in January 1986, about 250 gallons of No. 6 fuel oil was released to a sloped asphalt drive. An unknown amount of fuel oil entered a storm sewer drain and was discharged to the Kinnickinnic River as detailed in Section 2.4 (see Photograph No. 10).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified six SWMUs and two AOCs at the Rexworks facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 4, located at the end of this section, summarizes the SWMUs and AOCs at the facility and the recommended further actions.

SWMU 1 **Flammable Storage Room**

Conclusions: The unit is located indoors. Drums of wastes are stored covered in the unit for less than 90 days. Drums of wastes are stored on wooden pallets on the concrete floor. The flammable storage room has a 6-inch-high containment curb at entrance ways. No floor drain is located in the unit, and the unit is equipped with an overhead sprinkler system. No releases from this unit have been documented. The potential for release to groundwater, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this SWMU at this time.

SWMU 2 **SAAs**

Conclusions: The unit is located indoors. Drums of waste are stored open. Drums of waste are stored on wooden pallets or metal casters on the concrete floor. No floor drains are located near the SAAs. Paint stains were observed on the waste drums and on the concrete floor below the unit. The potential for release to groundwater, surface water, air, and on-site soils is low.

Recommendations: PRC recommends the facility close the drums when they are not being filled.

SWMU 3 **South Yard DSA**

Conclusions: The unit is located outdoors. Drums of waste are stored covered in the unit. Drums of waste are stored on wooden pallets on an asphalt surface. The unit is sloped toward a storm sewer drain that is about 150 feet northeast of the unit. During RCRA closure of this unit in 1988, about 40 cubic yards of contaminated soil was excavated from three gravel areas near the unit and was disposed off site. The potential for release to groundwater, surface water, and air is summarized below.

Groundwater: The potential for release is low. Soil contamination was identified and removed from three gravel areas.

Surface Water: The potential for release is moderate. The unit slopes to a storm sewer which discharges to the river.

Air: The potential for release is low. Potential contamination is limited to the subsurface.

Recommendations: PRC recommends that the facility implement release controls (such as concrete curbs) to prevent a release from flowing into the storm sewer.

SWMU 4 **Scrap Steel Storage Area**

Conclusions: The unit is located outdoors. Scrap steel is stored in metal hoppers on the gravel ground surface. A storm sewer drain is located in the middle of the unit. The hoppers are not covered. Waste stored in this unit is solid. No releases from this unit have been documented. The potential for release to groundwater, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this SWMU at this time.

SWMU 5 **Machining Chip Hopper**

Conclusions: This unit is located outdoors. Machining chips are stored in a metal hopper on an asphalt surface. The hopper is covered with a tarp. The machining chips are allowed to set in the machining area while excess soluble oil is drained off. Once drained, the machining chips are transferred to this unit for storage. Waste stored in this unit is solid. A storm sewer is located near the unit. No releases from this unit have been documented. The potential for release to groundwater, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this SWMU at this time.

SWMU 6 **Soluble Oil Accumulation Area**

Conclusions: The unit is located indoors. Drums of waste are stored closed. Drums of waste are stored on a wooden pallet on the concrete floor. No floor drains are located near this unit. The potential for release to groundwater, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this SWMU at this time.

AOC 1 **Former USTs**

Conclusions: Five USTs were removed. USTs were used for raw material and diesel fuel storage. A subsurface hydrogeologic investigation has identified petroleum-based hydrocarbon contamination in the soil and groundwater in the area of the former USTs. The potential for release to surface water and air is summarized below.

Surface Water: The potential for release is low. Contamination is limited to the subsurface.

Air: The potential for release is low. Contamination is limited to the subsurface.

Recommendations: PRC recommends that the facility continue remedial activities under WDNR supervision.

AOC 2 **Fuel Oil USTs**

Conclusions: This AOC consists of two active 32,000-gallon concrete tanks that were installed in 1930. These tanks have not been tested for leaks. During filling operations in January 1986, an unknown amount of No. 6 fuel oil was released to the Kinnickinnic River through an on-site storm sewer. The potential for release to environmental media is summarized below.

Groundwater: The potential for release is moderate because of the unknown integrity of the USTs.

Air: The potential for release is low. Potential contamination would be limited to the subsurface.

On-site soils: The potential for release is moderate because of the unknown integrity of the USTs.

Recommendations: PRC recommends that the facility install groundwater monitoring wells around the tanks as planned.

TABLE 4

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Flammable Storage Room	1987 to present	None	None
2. SAAs	1980 to present	Paint stains on waste drums and on concrete floor	Close drums when not being filled
3. South Yard DSA	1980 to present	About 40 cubic yards of contaminated soil was removed and disposed off site	Implement release controls to prevent a release from flowing into the storm sewer.
4. Scrap Steel Storage Area	About 1978 to present	None	None
5. Machining Chip Hopper	About 1978 to present	None	None
6. Soluble Oil Accumulation Area	About 1978 to present	None	None

AOC	Dates of Operation	Evidence of Release	Recommended Further Action
1. Former USTs	Unknown to 1990	Petroleum-based hydrocarbon contamination in soil and groundwater	Continue remedial activities under WDNR supervision
2. Fuel Oil USTs	1930 to present	An unknown amount of No. 6 fuel oil was released to the Kinnickinnic River during filling	Install groundwater monitoring wells around the tanks as planned

REFERENCES

City of Milwaukee. 1992. "List of Active Commercial and Private Wells." Department of Water Works. January 24.

Federal Emergency Management Agency. 1987. "Flood Insurance Rate Map for Milwaukee, Wisconsin." Community Panel No. 550278 0006D. November 19.

Rand McNally. 1992. *Road Atlas, United States, Canada, Mexico.*

Rexnord, Inc. (Rexnord). 1980a. "Notification of Hazardous Waste Activity." EPA Form 8700-12. August 18.

Rexnord. 1980b. "Part A Permit Application." U.S. Environmental Protection Agency (EPA) Form 3510-1. November 17.

Rexnord. 1981a. Letter Regarding Compliance Status Update. From Gene Crabb, Plant Engineer. To Paul Dimock, EPA. June 23.

Rexnord. 1981b. "Part A Permit Application." EPA Form 3510-1. December 21.

Rexworks. 1986. "Report of Oil Spill on January 23, 1986." No Date.

Rexworks. 1988. "Notification of Hazardous Waste Activity." EPA Form 8700-12. December 8.

Rexworks. 1989. Letter Regarding Corrective Actions. From Marv Nordling, Manager of Safety, Security, and Environment. To Walter Ebersohl, Hazardous Waste Section Supervisor, Wisconsin Department of Natural Resources (WDNR). January 30.

Rexworks. 1994. Letter Regarding Follow-Up Visual Site Inspection (VSI) Questions. From Tom Cornell, Safety and Environmental Manager. To Keith Foszcz, Environmental Engineer, PRC Environmental Management, Inc. (PRC). January 31.

Sigma Environmental Services, Inc. (Sigma). 1992. "Report of an Environmental Site Assessment at 445 West Oklahoma Avenue, Milwaukee, Wisconsin."

Sigma. 1994. Memorandum Regarding Leaking Underground Storage Tanks. From Robert Peschel. To Thomas Cornell, Rexworks. February 2.

Southeast Wisconsin Regional Planning Commission (SEWRPC). 1989. "Wisconsin Wetlands Inventory Map for Township 6 North, Range 22 East, Milwaukee County, Wisconsin." Base Map Created July 6, 1979; Revised February 27, 1989.

Triad Engineering, Inc. (Triad). 1988a. Letter Regarding Soil Samples Collected for Closure. From Stephen F. Galewski, Senior Engineering Technician. To Walt Ebersohl, WDNR. November 1.

Triad. 1988b. "Hazardous Waste Storage Site Closure Report." Rexworks, Inc., Milwaukee, Wisconsin. December 16.

U.S. Department of Agriculture (USDA). 1971. *Soil Survey of Milwaukee and Waukesha Counties, Wisconsin.* U.S. Government Printing Office. Washington, DC. July.

U.S. Department of Commerce (USDC). 1963. *Rainfall Frequency Atlas of the United States.* U.S. Government Printing Office. Technical Paper Number 40.

U.S. Department of Interior (USDI). 1989. "Endangered Species List." U.S. Fish and Wildlife Service, Division of Endangered Species. March.

U.S. Geological Survey (USGS). 1971. "7.5-Minute Series Topographic Map of Milwaukee, Wisconsin, Quadrangle."

USGS. 1973. *Water Resources of Wisconsin - Lake Michigan Basin. Hydrologic Investigations.* Atlas HA-432.

USGS. 1976. "7.5-Minute Series Topographic Map of Greendale, Wisconsin, Quadrangle."

Wisconsin Department of Natural Resources (WDNR). 1981. Letter Regarding Violations Cited During Compliance Inspection on March 25, 1981. From Frank Trcka, Hazardous Waste Specialist. To Eugene Crabb, Rexnord, Inc. March 26.

WDNR. 1986. Letter Regarding Violations Cited During Compliance Inspection on May 16, 1986. From Sandra J. Miller, Hazardous Waste Specialist. To Eugene Crabb, Plant Engineer. Rexworks. June 5.

WDNR. 1988a. "Air Compliance Inspection Report for Rexworks." Date of Inspection: March 29, 1988. Rhonda O'Leary.

WDNR. 1988b. Letter Regarding Violations Cited during Compliance Inspection on November 18, 1988. From Walter Ebersohl, Hazardous Waste Section Supervisor. To Marvin Nordling, Manager of Environmental Safety and Security. December 30.

WDNR. 1988c. Letter Regarding Closure of Rexworks Storage Facility. From Walter A. Ebersohl, Hazardous Waste Section Supervisor. To Marvin Nordling, Manager of Environmental Safety and Security, Rexworks. December 30.

WDNR. 1989. Letter Regarding Resolution of Non-Compliance. From Walter A. Ebersohl, Hazardous Waste Section Supervisor. To Marvin Nordling, Manager of Environment, Safety, and Security, Rexworks. March 6.

WDNR. 1990. Letter Regarding Water Discharge Compliance Monitoring Survey Conducted on March 27, 1990. From Gerald Jarmuz, Industrial Wastewater Section. To Marvin Nordling, Manager of Safety and Environment, Rexworks. December 11.

WDNR. 1991. Interoffice Correspondence/Memorandum Regarding Discharge of Oil to a Storm Sewer Drain in July 1991. From Michael J. Ellenbecker, Hazardous Waste Specialist. To Rexworks File. November 11.

Wisconsin Geological and Natural History Survey (WGNHS). 1992. Well Logs. Open File Reviewed on February 20.

APPENDIX A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

(Six Pages)

VISUAL SITE INSPECTION SUMMARY

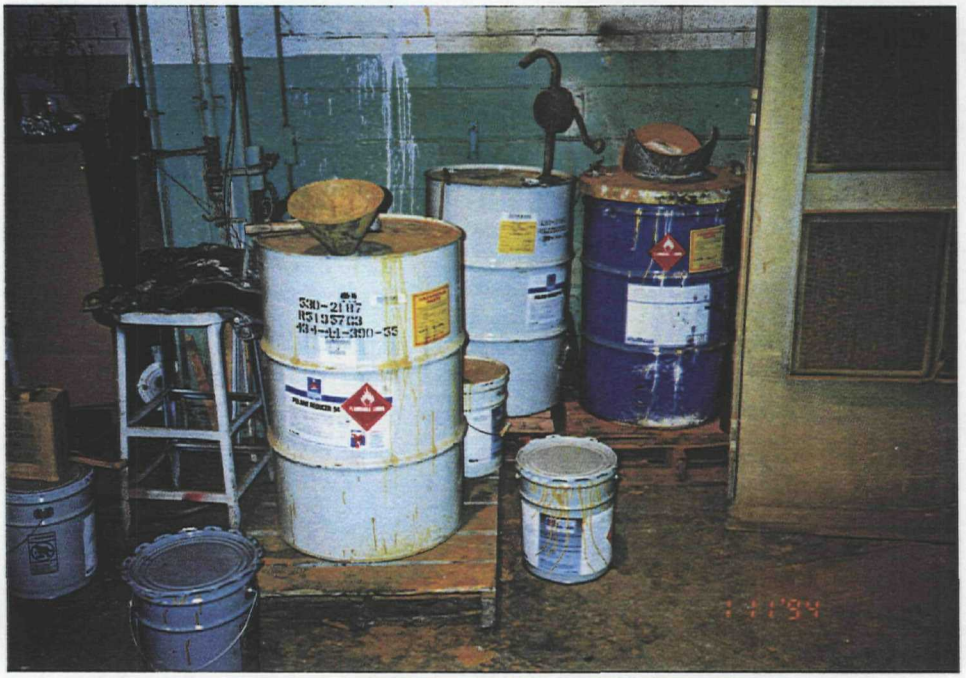
Rexworks, Inc. (Rexworks)
445 West Oklahoma Avenue
Milwaukee, Wisconsin 53207
WID 000 809 137

Date:	January 11, 1994
Primary Facility Representative:	Tom Cornell, Safety and Environmental Manager
Representative Telephone No.:	(414) 747-7200
Additional Facility Representatives:	Dennis Muesegades, Vice President Manufacturing Robert F. Peschel, Sigma Environmental Services, Inc.
Inspection Team:	Keith Foszcz, PRC Environmental Management, Inc. (PRC) Trent Schade, PRC
Photographer:	Keith Foszcz, PRC
Weather Conditions:	Calm; sunny; temperature about 20 °F
Summary of Activities:	The visual site inspection (VSI) began at 8:30 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents. The VSI tour began at 10:20 a.m. Rexworks representatives discussed specific operations conducted in each section of the facility as the tour progressed. PRC inspected the Flammable Storage Room (SWMU 1), the Satellite Accumulation Areas (SAA) (SWMU 2), the South Yard Drum Storage Area (DSA) (SWMU 3), the Scrap Steel Storage Area (SWMU 4), the Machine Chip Hopper (SWMU 5), the Former Underground Storage Tanks (UST) (AOC 1), and the Fuel Oil USTs (AOC 2). Photographs were taken of the SWMUs and AOCs. The tour concluded at 12:10 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 12:25 p.m.

Photograph No. 1 (No. 5 in field notes) Location: SWMU 1
Orientation: North Date: January 11, 1994
Description: Drums of wastes are stored on wooden pallets on the concrete floor of this unit. Shown in the photograph are three drums of waste thinners (D001) and four drums of waste paints (D001).

Photograph No. 2 (No. 4 in field notes) Location: SWMU 1
Orientation: West Date: January 11, 1994
Description: Drums of wastes are stored on wooden pallets on the concrete floor of this unit. Shown in the photograph are one drum of diesel fuel-contaminated groundwater (D001), one rusted drum of nonhazardous waste grease, four drums of nonhazardous used hydraulic oil, and two drums of groundwater from quarterly sampling.

Photograph No. 3 (No. 2 in field notes) Location: SWMU 2
Orientation: Northeast Date: January 11, 1994
Description: This photograph is of the SAA at paint booth No. 4. Empty paint pails are allowed to drain into the blue drum of waste paints (D001). Waste thinners (D001) are transferred into the white drum from a 5-gallon pail via a plastic funnel. Note paint stains on the floor.



Photograph No. 4 (No. 3 in field notes) Location: SWMU 2
Orientation: South Date: January 11, 1994
Description: This photograph is of paint booth No. 3. Note drums are not stored covered.

Photograph No. 5 (No. 8 in field notes) Location: SWMU 3
Orientation: Northwest Date: January 11, 1994
Description: Drums of nonhazardous baghouse dust, soluble oil, waste paint filters, and used oil are stored on wooden pallets two high.

Photograph No. 6 (No. 9 in field notes) Location: SWMU 3
Orientation: Northwest Date: January 11, 1994
Description: Note some drums are rusted, and drums of waste paint filters have bulging bottoms.

Photograph No. 7 (No. 1 in field notes) Location: SWMU 4
Orientation: Northwest Date: January 11, 1994
Description: Nonhazardous scrap steel is stored in this unit; primary scrap steel is stored in the 12-cubic-yard hopper on the left, and secondary scrap steel is stored in the 4-cubic-yard hoppers on the right.

Photograph No. 8 (No. 7 in field notes) Location: SWMU 5
Orientation: North Date: January 11, 1994
Description: Nonhazardous scrap steel from machining is stored in this unit.

Photograph No. 9 (No. 6 in field notes) Location: AOC 1
Orientation: South Date: January 11, 1994
Description: Four USTs were removed from this area in 1988 and 1990.

Photograph No. 10 (No. 10 in field notes) Location: AOC 2
Orientation: North Date: January 11, 1994
Description: Two concrete fuel oil USTs are located below the corner of the facility building.

APPENDIX B

VISUAL SITE INSPECTION FIELD NOTES

(Twenty Four Sheets)

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

Rexworks (Rexnord)
Milwaukee, WI.
WID 000 809 137

PRC Keith Foxcz
Trent Schade

Rex Tom Cornell
Bob Peschel - Sigma
Dennis Muesegades

830 Arrive at Site

1901
1904 facility Built
was a foundry

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

Facility Operations
concrete mixer
trash compactors/grinders
trash movers.
Maxi grinder
fabric, weld, machining
assembly, paint

Shot blast
torit dust collector
may not be used by in
future

water used for cutting
steel via torch ~~rock~~ cutter -
process water goes to MMSD

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

cont monitored by local limit, No NPDES Permit. (Custer Cattle points on map).

oil recovery in above manhole. stated as Non Haz soluble oil, different vendors depending on cost

Paint Booth - Wash wall, drummed every 4 mo., entire water drummed w/ sludge

400,000 sq ft - multiple additions '30, '40s, '60s

KF 122

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

field service

AC Siemens - leased from Rexworks. 2 yrs

- Assemble
- 30,000 sq ft
- tool crib

Max, grind - shredder started in February - bought rights to product line.

Machine shop

soluble oil used, put in pail, to drum, to storage

from chip area - gravity drain

KF 123

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

F002 - not sure when chlorinated would have been used

- 24.5 acres.
- 250 / 2 shifts
- guard at night and weekends.

1 - 575 gallon UST also removed - gal gasoline.

Storm water permit applied.

KF 130

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

1040 tour

Scrap steel
- buildings (one crane) (secondary)
- slag
- scrap steel (primary)

Fl[illegible] Northeast
scrap steel
storm sewer in middle of unit.
gravel base

Paint booth #4

Blue drum - waste paint
white thinner - on pallet.

KF 131

Field Logbook No. ____ Date 1/11/94

Project No. ____

Project Name Rexworks

PL Northeast
Paint booth #4,
paint stains on floor,

oils received in bulk
and pumped into
mobil totes.

scrapsteel from
plasma cutter and
trimming

Water table
generate slag

Shot blast area
recycled shot,
baghouse.

KJ 132

Field Logbook No. ____ Date 1/11/94

Project No. ____

Project Name Rexworks

2nd shotblast - [illegible]
another mini baghouse
no longer used.

4-5 oil drums for
waste, around site.

Water booth
- use voc paint
SAA on wheels.
floor dry,
also one on pallet

leased area
warehouse - service
tools restocked and
sent out.

KJ 133

Field Logbook No. ______ Date 1/11/94

Project No. ______

Project Name Rex works

Paint booth #3.
wastes stored on pallets,
drums open funnel and
pail holder.
P3 South above

Paint Booth #5
SAA on pallets, dry
paint filters placed in
55 gal drums in
water to make them
non hazardous.
filter removed from
~~hopper~~ barrels and put
into hopper and water
goes to MMSD

KJ

Field Logbook No. ______ Date 1/11/94

Project No. ______

Project Name Rexworks

Flammable Storage
Room. current
DSA, 6" containment,
sprinkler system
concrete floor, not
cracked

(D001) waste thinner 3
(D001) waste paints 4
dates of 12/15/93
on pallets, sealed.
(D001) waste Diesel fuel - from
(one) rebuilt of trashmaster
(one) drum non haz waste
grease - rusted drum
(4) drums non haz waste
hydraulic oil - from
change out of molding pit

KJ

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

two drums of groundwater from sampling in quarterly analysis, waiting for characterization

P4 West DSA
GW drums in back on right, Diesel fuel in front on left,

P5 North DSA
Haz waste drums, cinder block walls.

P6 South USTs
removed in 88-90

SK parts washers
mineral spirits.

KM

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

Oil Room - floor oil soaked - floor dri on it;
waste oil drum in there on concrete.

P7 North - turning from machine shop, sewer to west
DSA - south yard
- all non haz drums
- empties

P8 Northwest

P9 Northwest
drums of Bayonne dust, soluble oil, waste oil, paint filters, oil pellets,

KM

Field Logbook No. ____ Date 1/11/94

Project No. ____

Project Name Rexworks

con't drums rusted, damaged, filters are bulging cuz of water.

asphalt, sloped toward facility.

Fuel oil USTs.

1930's, concrete.

P10 USTs, 33,000 gallon

one below building and one ther in front of garage door.

Maintenance area

Secondary scraps - crushed paint pails with straps.

Field Logbook No. ____ Date 1/11/94

Project No. ____

Project Name Rexworks

1210 Return from tour. hold exit meeting

Obtain requested info.

Baghouse dust

Chem waste - Omega Hills
21,280 pound

Paint filters dust - Chem waste
44,960 pounds

Sludge - Chem waste
3 - 12 yd luggers

Soluble oil
3,960 gallons
BFI

Field Logbook No. _____ Date 1/11/94

Project No. _____

Project Name Rexworks

Sludge is cleaned out by contractor, lugger brought in, ~~filled~~ lined, filled, and brought out. not stored on site

Exit facility

weather ~ 20°F, sunny.

Field Logbook No. _____ Date _____

Project No. _____

Project Name _____

Field Logbook No. _____ Date 1-11-94 T.S.

Project No. 309-R05032 WI IG

Project Name PA/VSI: Rexwork

PA/VSI: Rexworks

WID 000 809 137

445 W. Oklahoma Av

Milwaukee, WI 53207

8:30 we arrived on site

RRC representatives

Keith Foszcz

Trent Schaefer

Rexworks:

Tom Cornell

Dennis Muscegades

Consultant:

Bob Peschel, Sigma Est

60

Field Logbook No. _____ Date 1-11-94 T.S.

Project No. 309-R05032 WI IG

Project Name Rexworks

Briefly explained PA/VSI.

Sigma Recently completed an updated version of Contingency & Spill Plan.

Facility was constructed in 1900s. Representatives provided history of facility as a seperate document.

Discussed Facility operation

Trash Compactors

Shredders

Trash movers

Cement Mixers/Haulers.

Trent Schaefer

61

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WI1G

Project Name Rexworks

Painting is source of haz. waste. Paint is sat. acc. in various areas throughout Facility.

Shot Blasting produces Baghouse Dust.

Also have hyper Shot Blasting

Water table used to cool ~~water~~ bit during cutting. Water discharge. Process water conforms to MMSD. Facility monitors. Oil & Grease are collected from WW. Shipped off as

Tim Shaw

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WI1G

Project Name Rexworks

non-haz. waste. Shipped to Different Vendors.

One Paint Booth generates waste paint sludge from water Curtain.

Facility is ~ 400,000 ft² under Roof.

A.C. Siemens. Leases space. Generate General refuse. 2nd year as Lessor. 30,000 ft² shop space.

Tim Shaw

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WEIG

Project Name Rexworks

Maxi-grind (Rexworks)
Grinders @ Demostes
Used to shred various
materials.
2 more paint booths.

Totes (300-gallon) of
liquid virgin material.

Machine Shop.
Metal Chips
Soluble Oil
Chips are dropped into
container to drip off
oil. Oil drips into
pail. Pail into 55-gal
drums.

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WEIG

Project Name Rexworks

Maint Dept.
Drummed Oil
Oil storage area.
Drums of waste oil
generated from machinery
maintenance. Oil &
Hydraulic Fluid accumulated
in 55-gallon drums.
Chips are stored in
10-yard lapper Box.
Chip reclaimer picks up.

2. USTs
3,000 gallon tanks.
Underground Concrete Tanks
Fuel Oil storage.
Still in use.

1-11-94 TS

Field Logbook No. _____ Date ~~1-11-93~~

Project No. 309-R05032 WI 1G

Project Name Rexworks

Tanks have no leak detection. Facility is looking into monitoring G.W. around tanks.

Need to review WDNR LUST files.

2 USTs removed in '88
2 " removed in '90

Tanks were leaking. WDNR is working w/ facility to complete Remedial Activities.

Tank Description Provided under Separate Cover.

Tut Shum

1-11-94

Field Logbook No. _____ Date ~~1-11-93~~ TS

Project No. 309-R05032 WI 1G

Project Name Rexworks

1979 Rexnord purchased site

1982 Rexworks leveraged Buy out.

1984 went Public.

South Yard.

Non haz.

- Baghouse dust shot blast
- Waste O.
- Paint filters
- Virgin Product.
- Was TSDF

Storage closed.

Requested Closure Documentation re: remediation.

Tut Shum

1-11-94

Field Logbook No. _____ Date ~~1-11-93~~ TS

Project No. 309-R05032WI1G

Project Name Rexworks

Empty Drums sold for recond. drums.

Empty 5-gallon Paint Pails are crushed & shipped out & 1 gal. Thinner Paint & Thinner Containers are drained out prior to leaving Paint Booth Area. Shipped out as scrap.

Non-contact cooling water WPDES discharge.

Air permits for new source permits.

Tot Schmidt

1-11-94 TS

Field Logbook No. _____ Date ~~1-11-93~~

Project No. 309-R05032WI1G

Project Name Rexworks

2 - 5K Parts Washers.

1 Drum of Sorbent.

Waste Streams

~40,000 lbs./yr. of hazardous waste.

Facility Provided:

5 yrs. ~~the~~ Waste Annual Reports

Characterizations for Paint Sillers & dust Wet Paint Sludge Bag house Dust

Tot Schmidt

Field Logbook No. _____ Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032.WI1G

Project Name Rexworks

Facility will provide quantity & destination for non-haz. & scrap metal.

Scrap metal is generated from several sources

No PCBs on site from transformer.

3 ASTs

Product is carried around in 300-400 gallon totes carried by forklift

Tod Schaum

Field Logbook No. _____ Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032.WI1G

Project Name Rexworks

Raw Products

Steel (Plates/sheets/structural)

CAT Engines

Allison Transmissions

Tires

Oils

For Maximum - Mostly outside source for fabrication

Grease

Boiler Rm. Rust inhibitor

Paint - mostly 5-gallon pails & 1-gallon containers of thinner

Some off-spec products

Material purchased as per order to keep inventory low.

Tod Schaum

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WI1G

Project Name Rexworks

Scrap steel approx.
24,000 tons/yr.
total. Majority is
plate & sheet steel.

Total of 5 spray booths,
each w/ 2 accumulators

Asked about Waivers
waste codes listed on Part A.
Facility did not know about
past operations, possible,
S-K suggested switching over
over from chlorinated waste.

~25 acres, is land acreage

Tim Shea

Field Logbook No. _____ Date 1-11-94 TS

Project No. 309-R05032WI1G

Project Name Rexworks

250 total on two shifts.
Facility is fenced. Guarded
during 2nd & maint. shifts.

Facility is filling out SW discharge
permit.

Former DSA Closure:
Facility will provide
Copy of Report.

10:08: Broke for Tour.

10:45: Left Facility
Going to Municipal Dump
Gravel Surface
Snow Cover.

Tim Shea

Field Logbook No. 5 Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032WE1G

Project Name Rexworks

Paint Booth No. 4
Two Waste Drums Accumulating
Labeled w/ Hazardous Waste
labels. Labels are dated

10:30 Pict ② NE
Spray Booth.
Sat. Accum. Area.
Concrete floor.
Evidence of spilled
paint dried on floor.
Drum top of one has
funnel; other has
5-gal bucket drain with
it.

Tim Shaw

Field Logbook No. Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032WE1G

Project Name Rexworks

10:48 Shot Blaster
Satellite Used Shot
Generated Here.
Baghouse Collects Dust
from Shot Blast

10:51 Small Wheelabrator
Shot Blaster.
No Longer Used.

10:56 Wet Spray Booth
Metal Pieces Painted
Using Organic Based Paints
Note some spillage
near 55 gal sat. area

Tim Shaw

Field Logbook No. ______ Date ~~1-11-95~~ 1-11-94 TS.

Project No. 309-R05032WI1G

Project Name Rexworks

11:05 A.C. Spencer Leased Pty. General Refuse Lugger Box.

11:07 Spray Booth 3
2 sat. accumulation drums. Some spillage Conc. Floor.
Drums are ID'ed / identified as

10:10 Pit ③ South
Sat. acc. Drums:

11:15 Paint Booth No. 5.
Paint Filters Changed about 1, 2, or 3 months.
55-gal. Drums & Water

[signature]

Field Logbook No. ______ Date ~~1-11-97~~ 1-11-94 TS

Project No. 309-R05032WI1G

Project Name Rexworks.

Filters are non-haz.
Submerged in Water.
Water is drained off.
Filters are shipped off in 12-yd. lugger
Water to MMSD.

11:20 Separate Building for DSA. 5 or 6 cubic
Explosion Proof sprinkler System. Concrete floor
Sealed Curbing.
7 drums full of Paint Material
5 Waste Paint
2 Thinner.

[signature]

Field Logbook No. _____ Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032WI1G

Project Name Rexworks

1 Drum Diesel Fuel from Rebuilding of Trash motors.

Non-haz. Waste:

Grease } Rework of
Hyd-oil } machany

& some left. Grease outside.

Two Drums of Potentially Contaminated Water Yet to be analyzed

11:30 Pict (4) West. Rear of DSA.

Pict (5) North. FRONT of DSA

Tod Schmidt

78

Field Logbook No. _____ Date 1-11-94 ~~1-11-93~~ TS

Project No. 309-R05032WI1G

Project Name Rexworks

11:35 Pict (6) SW Front UST Area. Currently Undergoing Remediation.

11:40 Boiler Room for clarity

11:45 Scrap Metal Area where Oil/coolant is drained from scrap. Oil goes in to 55-gal drum. Scrap out to 12-yd. Dugger

11:48 Oil Room Floor Conc. Stained o.n.

Tod Schmidt

79

Field Logbook No. _____ Date 1-11-99

Project No. 309-R05032WI1G

Project Name Rexworks

11:12 Pict (7) N.
Scrap metal S.
12-yd hopper
Asphalt.

11:53 Former HW DSA.
Currently active Accumulation
non-haz wastes.
Empty Barrels
Bag house dust
Drum O/
Solvents O/
Paint filters / Sweepings

11:54 Pict (8) HW
Pict (9)

Field Logbook No. _____ Date 1-11-99

Project No. 309-R05032WI1G

Project Name Rexworks

11:59 Pict (10)
N. Concrete UST.
Area where sump was
melted 31,000 gal
UST. other 3
beneath building
Storm sewer is located
just south of this
area.

12:09 Scrap tank accumulation
prior to crushing

12:11 Concluded Tour
Returned for Exit
Meeting.

Field Logbook No. _____ Date 1-11-94

Project No. 309-R05032WI1G

Project Name Rexworks

Facility will try to get us information. If facility cannot get it to us they will send it.

We explained the report process. Facility would like a copy of the final PA/VSI report. Facility asked about Scrap process.

Facility Provided HW Storage S.Q. Clean Report.

Field Logbook No. _____ Date 1-11-94

Project No. 309-R05032WI1G

Project Name Rexworks

Non-haz waste to Clean-Waste: Omega Hills Paint Filters & Dust

Soluble Oil Coolant 3,960 gal. 1993

Sludge Generated from Wet Paint Booth is generated in Batches, 1 or 2 x per year.

Field Logbook No. _____ Date 1-11-94

Project No. 309-R0T032WI1G

Project Name Rexworks

12:25 Concluded Mtg.

Weather: 24°F, Sunny

No Breeze.

Field Logbook No. _____ Date _____

Project No. _____

Project Name _____

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